A SMALL COLLECTION OF LAND SHELLS FROM NEBRASKA

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During the summer of 1941 the Carnegie Museum Expedition for Vertebrate Fossils, under the leadership of Dr. J. LeRoy Kay, spent a few days in northwestern Nebraska, with the First Field Conference of Vertebrate Paleontology, on its return eastward. In the short time spent in this section of Nebraska I had the opportunity of collecting some mollusks at two localities, northwest of Crawford and at Agate.

The western section of Nebraska consists of soils which vary from those of fine texture to those of rough stony land, with frequent rock outcroppings, including broad plateaus, deep and steep-walled canyons, bold escarpments, buttes, and here and there areas of "bad lands." This area, the plains region, is characterized by short-grass communities, dominated by grama grass, buffalo-grass, and certain grass-like sedges, and with straggling western yellow pines scattered over the canyon sides, the buttes, ridges, and the talus slopes. The topography consists of broad, slightly uneven, grassy plains, streams running in canyons which are frequently deep and rock-walled, dry "sand-draw" canyons carrying water only after rains or from melting snow, rocky escarpments, ridges and buttes with scattering pines, deciduous trees or shrubbery in the bottoms of the canyons, along the streams, or about the ranches, and an increasing amount of cultivated land.

The "bad lands," due to excessive erosion, is a habitat in the plains region, and is characterized by their sparse flora and fauna, restricted to only those forms which can withstand the severe conditions of this environment.

About eight miles northwest of Crawford, approximately between Remington and Orella, a small branch of Sand Creek, itself a tributary of the White River, has cut a wide canyon through the bad lands of that section of Dawes County. The rains, snows, temperatures, and winds have had their eroding effects in this area, exposing the white sands and fine clays in a

steep outcrop a few hundred yards from State Highway No. 2. From the face of this outcrop were collected *Succinea grosvenorii* Lea and *S. oregonensis* Lea. It is presumed that these amphibious snails were originally from this outcrop as they were white and devoid of epidermis. In the field above the outcrop there were no lakes or other types of water from which it was possible for these snails to have originated.

At the base of a small "sand-draw" the small branch of Sand Creek had deposited a fine layer of particles of vegetation from which were gathered the following species of land snails:

Gastrocopta pentodon (Say) *Hawaiia minuscula* (Binney)
Vallonia costata (Muell.)

At Agate, in Sioux County, Capt. James H. Cook established a cattle ranch extending ten miles on both sides of the Niobrara River. The water from this river has been used for irrigation purposes, some of the ditches traversing the lawn of the ranch. Along these ditches are found growing cottonwoods, willows, small bushes and shrubs. A number of small forms of terrestrial mollusca were found under the layer of leaves and logs and branches close to the edge of the ditches under the willow growths or shaded places in the stands of cottonwoods. The species are:

Succinea grosvenorii Lea *Vallonia albula* Sterki
Vertigo ovata (Say) *Vallonia costata* (Muell.)
Vallonia costata montana Sterki

The discovery of *Vallonia costata montana* (teste Pilsbry!) at Agate, Neb., extends the distribution of this variety farther eastward than hitherto known. Previous to that time the distribution of *V. c. montana* was confined to an area that included eastern Idaho, northeastern Utah, central and western Colorado, Wyoming, and eastern and southwestern Montana. The easternmost distribution, that closest to Agate, Neb., is Laramie, Wyo., which is approximately 120 miles northeast of the latter locality.

The Niobrara River at Agate has cut a winding course through and across the uneven plains of that section of Sioux County, exposing steep banks of white sands. These banks are consid-

ered either of late Pleistocene or early modern times. From one of these banks in the bend of the river, about 500 yards from Agate, the following terrestrial mollusca were collected:

Hawāiia minuscula (Binney) *Vallonia costata* (Muell.)
Vertigo ovata Say *Succinea grosvenorii* Lea
Succinea oregonensis Lea

Species of *Physa, Lymnaea, Helisoma, Gyraulus,* and *Sphaeriidae* were also dug from the bank, which contained also the jaw of a young *Bison* about fifty feet from the top of the exposure.

AN OVERLOOKED DESCRIPTION OF A NORTH AMERICAN GASTROPOD

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Joseph True described a new gastropod, which, as far as I can ascertain, has not been mentioned in any of the leading works on North American conchology or in any of the monographs on *Helix.* This overlooked shell appeared in the Proceedings of the Essex Institute, vol. 2, 1857, p. 193, as "*Helix minima,* True, sp. nov.?" and was described as follows:

An exceeding small species—shell, minute, rounded-conical, smooth apex abtuse, epidermis of a uniform reddish horn color; whorls four, rounded above, and below, with a well defined suture. Aperture rounded, lip simple and thin, umbilicus broad and deep. Diameter about one-twentieth of an inch.

Helix minima was collected at Salem, Mass., and was "found under loose stones, wood, and decayed leaves, within half a mile of Great Swamp-meadow, which is situated in the limits of Salem." This species was associated with (I modernize the nomenclature): *Mesodon albolabris* (Say), *Anguispira alternata* (Say), *Strobilops labyrinthica* (Say), *Hawaiia minuscula* (A. Binney), *Haplotrema concavum* (Say), *Discus cronkhitei anthonyi* (Pils.), *Zonitoides arboreus* (Say), *Retinella electrina* (Gould), *R. indentata* (Say), *Helicodiscus parallelus* (Say), *Euconulus chersinus* (Say), and *Vallonia pulchella* (Muell.).